ditrimethylolethane or a tetrafunctional central group of the general formula I

$$C[-A_q-X-]_m[-A_r-X-]_n[-A_s-X-]_o[-A_t-X-]_p \quad (I),$$

in which the indices and variables have the following definitions:

m + n + o + p = 4; where
m is an integer from 1 to 3, and
n, o and p are 0 or an integer from 1 to 3;

q, r, s and t are an integer from 1 to 5, where q ≥ r, s, t, especially q > r, s, t;

X is -O-, -S- or -NH-;

A is $-CR_2-$; where

R is -H, -F, -Cl, -Br, -CN, $-NO_2$, C_1-C_3 alkyl or haloalkyl or C_1-C_3 alkoxy radical or, if q, r, s and/or t are at least 2, R is a C_2-C_4 alkanediyl and/or oxaalkanediyl radical having 2 to 5 carbon atoms and/or an oxygen atom -O- which bridges from 3 to 5 carbon atoms of the radical -A-;

(ii) cyclic and/or acyclic C_9-C_{16} alkanes

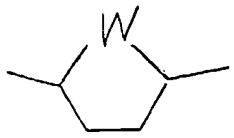
functionalized with at leasto two hydroxyl groups or at least one hydroxyl group and at least one thiol group;

(iii) polyols obtainable by hydroformylating oligomers of the formula III,

$$R^3R^4C=[=CH-R^2-CH=]_v=CR^5R^6 \quad \text{(III)},$$

in which R^2 is $-(-CH_2-)_w-$,
in which the index w is an integer from 1 to 6, or

=



in which W is $-CH_2-$ or an oxygen atom;

R^3, R^4, R^5 and R^6 independently of one another are hydrogen atoms or alkyl; and

the index v is an integer from 1 to 15.

5. A liquid composition or a homopolymer or copolymer as claimed in claim 4, wherein

- the polyols (I) used comprise a hyperbranched compound obtainable by reacting 2,2-

bishydroxymethylbutane-1,4-diol with phthalic anhydride and then reacting the resultant intermediate with glycidyl esters of tertiary, highly branched, saturated monocarboxylic acids,

- the polyols (ii) used comprise dialkyloctanediols, especially diethyl-octanediols, and

- the polyols (iii) used comprise hydroformylated and hydrogenated oligomers, obtainable by metathesis from acyclic monoolefins and cyclic monoolefins, hydroformylation of the resultant oligomers and subsequent hydrogenation, the cyclic monoolefin used comprising cyclopentene and the acyclic monoolefins used comprising hydrocarbon mixtures obtained in petroleum processing by cracking (C_5 cut), and the polyols (iii) having a hydroxyl number (OHN) of from 200 to 650, in particular from 250 to 450, a number-average molecular weight M_n of from 400 to 1 000, in particular from 400 to 600, a mass-average molecular weight M_w in the range from 600 to 2 000, in particular from 600 to 1 100, and a polydispersity M_n/M_w from 1.4 to 3, in particular from 1.7 to 1.9.

6. A liquid composition or a homopolymer or copolymer

as claimed in claim 3, wherein the reactive diluents containing epoxide groups comprise

(iv) glycidyl ethers of polyols or polyphenols such as glycerol, diglycerol, glucitol, erythritol, pentaerythritol, dipentaerythritol, trimethylolpropane, trimethylolethane, ditrimethylolpropane, ditrimethylolethane, tetrakis(2-hydroxyethyl)ethane, tetrakis(3-hydroxypropyl)methane, the tetraols II1 to II10:

(II1)

(II2)

(II3)

(II4)

(II5)

(II6)

$HO-(-CH_2-)_3-C[-(-CH_2-)_2-OH]_3$,

(II7)

$HO-(-CH_2-)_3-C[-(-CH_2-)_2-OH]_2(-CH_2-OH)$,

(II8)

$HO-(-CH_2-)_4-C(-CH_2-OH)[-(-CH_2-)_2-OH][-(-CH_2-)_3-OH]$ or

(II9)

$HO-(-CH_2-)_5-C(-CH_2-OH)[-(-CH_2-)_4-OH]2$

(II10);

the polyols (i), (ii) and (iii), pyrocatechol, resorcinol, hydroquinone, pyrogallol, phloroglucinol, (p-hydroxyphenyl)phloroglucinol, 5-(7-hydroxynaphth-1-yl)pyrogallol, bisphenol F, bisphenol A or novolaks;

(v) low molecular mass epoxy resins or oligomers which contain glycidyl-containing monomers (A6) in copolymerized form;

(vi) glycidyl esters of Versatic® acid;

(vii) epoxy resin esters of saturated and unsaturated fatty acids (epoxidized oils);

and/or

(viii) epoxidized triglycerides of natural oils and esters.

7. A liquid composition as claimed in any of claims 1 or 3 to 6 or a homopolymer or copolymer as claimed in any of claims 2 to 6, preparable by homopolymerization or copolymerization of olefinically unsaturated monomers in a Taylor reactor having an external reactor wall located within which there is a concentrically or eccentrically disposed rotor, a reactor floor and a reactor lid, which together define the annular reactor volume, at least one means for metered addition of reactants, and a means for the discharge of product, where the reactor wall and/or the rotor are or is geometrically designed in such a way that the conditions for Taylor vortex flow are met over substantially the entire reactor length in the reactor volume, i.e. in such a way that the annular gap broadens in the direction of flow traversal.

8. A process for preparing a liquid composition or a homopolymer or copolymer of olefinically unsaturated compounds by free-radical (co)polymerization in a liquid reaction medium, which comprises using reactive diluents for

thermally curable multisubstance mixtures as the reaction medium.

9. The process as claimed in claim 8, wherein a fraction of the reactive diluents is modified after the (co)polymerization with olefinically unsaturated compounds, especially with monomers (A2), (A5) and/or (A6), so that the resulting liquid composition is curable both thermally and by actinic light and/or electron beams.

10. The process as claimed in claim 8 or 9, conducted in a Taylor reactor having an external reactor wall located within which there is a concentrically or eccentrically disposed rotor, a reactor floor and a reactor lid, which together define the annular reactor volume, at least one means for metered addition of reactants, and a means for the discharge of product, where the reactor wall and/or the rotor are or is geometrically designed in such a way that the conditions for Taylor vortex flow are met over substantially the entire reactor length in the reactor volume, i.e. in such a way that the annular gap broadens in the direction of flow traversal.

11. The use of a liquid composition as claimed in any of claims 1 and 3 to 7, of a homopolymer or

copolymer as claimed in any of claims 2 to 7 or of a liquid composition or homopolymer or copolymer prepared as claimed in any of claims 8 to 10 to prepare coating compositions, adhesives or sealing compounds curable thermally or curable thermally and with actinic light and/or electron beams.